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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,287	02/28/2002	Karl C. Hansen	KLH 0105 PUS	3833

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EXAMINER	
EISEN, ALEXANDER	

ART UNIT	PAPER NUMBER
2674	

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/085,287	HANSEN, KARL C.	
	Examiner	Art Unit	
	Alexander Eisen	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *18-25* is/are allowed.

6)☒ Claim(s) *1-17 and 26-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6,10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 3, 5, 6, 7, 8, 9, 12-16, 17, 26-28 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Arita et al., ("Arita"), US 5,712,658.

With respect to claims 1 and 26, Arita discloses an information presentation apparatus where a pointer remotely points to a large screen, the image on the screen is picked up by a monitor camera, and an image processing unit extracts the feature of the pointer used for pointing based on the resulting image signal to identify the position of a cursor and generates a computer response based on this information.

The identifying feature, which represents the encoding of the specific information associated with that feature and is selected by a mode switch, can be a shape of a light spot on the screen or its color. See FIGS. 1-3, 4A-D, 5A-D, 8, 9, 17, 60, 61 and 70; also abstract and col.2, line 12 – col.4, line 4, col.13, lines 14-50, col.18, lines 14-37; col. 42, line 63 - col. 43, line 39.

As to claim 2, Arita further teaches capturing at least one image of the optical pointer using a camera and processing the at least one image to identify the plurality of the features of the optical pointer (see abstract for example).

As to claim 3, see col. 18, lines 23-38, describing the usage of frame memories to extract the feature of the pointer.

As to claim 5, the transmitted by light encoded information (such as color or shape) is transmitted to remote located (screen 4) surface for detection by a camera 1 (FIG. 1).

As to claim 6, the screen 4 or the camera 1 can be considered as a remote receiver.

As to claim 7, the plurality of feature includes emitters (laser diodes 2571; see FIG. 61) capable of generating light.

As to claim 8, the plurality of features includes a plurality of sections (three corresponding to a number of laser diodes in FIG. 61), each section having at least one area of light, the area generated by a portion of an emitter, a dedicated emitter (corresponding to a single diode), or a cluster of emitters acting together (note mode 2 in FIG. 61, for example, where two laser diodes are turned on together).

As to claim 9, each light source constitutes a channel (three laser diodes are shown in FIG. 61).

As to claim 12, Arita teaches a plurality of attributes that can be associated with a pointer.

As to claim 13, each pointer is uniquely identified (col. 7, lines 33-38).

As to claim 14, it is understood that turning on and off the pointer represents a time-dependent pattern and can be distinguished among multiple image frames as either presence of the pointer or lack thereof.

As to claim 15, Arita teaches such attribute as a wavelength.

As to claim 16, Arita teaches that the pointers used by an operator and a manager are discernable by shape or color, and therefore identify their users (col. 7, lines 30-53; col. 24, lines 18-30).

In regard to claim 27 Arita teaches a projector in communication with computer for projecting an image of the output of the computer onto the screen.

As to claim 28, the system comprises a laser pointer for generating the optical cursor.

As to claim 33, Arita teaches a feature such as the color of the laser pointer (col. 18, lines 38-43).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 4 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arita in view of Tsutomu, JP 409080372A (reference provided with the applicant's IDS).

Arita discloses an information presentation apparatus where a pointer remotely points to a large screen, the image on the screen is picked up by a monitor camera, and an image processing unit extracts the feature of the pointer used for pointing based on the resulting image signal to identify the position of a cursor and generates a computer response based on this information.

Arita does not disclose that in the method for communicating information to remotely located computer the step of generating command comprises generating a command to move a cursor to a position corresponding to a position of a cursor transmitted by an optical pointer.

Tsutomu teaches a method for interfacing with a computer through a projected display of the computer using a laser pointer and processing an image of the projected display captured by a camera, determining position of the laser pointer spot on the projected display, generating commands to position a computer mouse pointer at the screen position corresponding to the laser pointer spot.

It would have been obvious to one of ordinary skill in the art at the time when the invention was made that the cursor positioning method taught by Tsutomu can be implemented in the method of Arita without bringing any unexpected result and would simply constitute the alternative choice of how the pointing function is executed. In Arita's view the pointer spot and the computer cursor is actually the same, because the pointing action is executed at the location of the light spot, so as if the computer cursor was pointing to that location; Tsutomu teaches that the computer cursor is moved to the location where the light pointer is projected and thus the pointing action is realized. Therefore there would not be any distinction between the two methods or advantage of using either one of them over another, because both will be pointing at the location of interest and cause the computer to execute the command associated with it.

As to claim 29, Tsutomu teaches the modulation of the pointer beam (blinking), which would uniquely identify the external optical pointer (paragraph [0022]).

5. Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arita in view of Nolan, US 5,754,873.

Arita does not disclose that the computer includes instructions for processing the image frames to detect a pattern of movement and to decode the pattern of movement to generate zoom command, or rotation command input.

Nolan teaches an alternative method for zoom control including computer software for identifying gestures (pattern of movement) of the pointer device (col. 8, lines 45-56).

It would have been obvious to one of ordinary skill in the art at the time when the invention was made in view of Nolan the system of Arita is capable of capturing frames with the image of the pointer device and therefore the pattern of the pointer movement, and to provide the pointer computer system of Arita with gesture controlled zoom command as an alternative way to menu driven zoom control, which would constitute an alternative way of providing command control without bringing about any unexpected result.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arita in view of Scanlon et al. ("Scanlon"), US 3,740,559.

Arita discloses an information presentation apparatus where a pointer remotely points to a large screen, the image on the screen is picked up by a monitor camera, and an image processing unit extracts the feature of the pointer used for pointing based on the resulting image signal to identify the position of a cursor and generates a computer response based on this information.

Arita further teaches a voice command used in the system (col. 21, lines 9-15) but does not disclose that voice data can be transmitted through an optical data channel included in the pointer.

Scanlon teaches a voice communication system, wherein a human voice is transmitted over a light beam (col. 3, lines 25-27).

It would have been obvious to one of ordinary skill in the art at the time when the invention was made to improve the pointing and command system of Arita with the voice communication method taught by Scanlon, since Arita lends itself conveniently as already

having a light modulating system in the pointer. This would allow simplifying the Arita by eliminating the voice command system based on the headsets Ma and Mb (see FIGS. 1-2).

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arita in view of Amro et al., ("Amro"), US 6,664,949.

Arita discloses an information presentation apparatus where a pointer remotely points to a large screen, the image on the screen is picked up by a monitor camera, and an image processing unit extracts the feature of the pointer used for pointing based on the resulting image signal to identify the position of a cursor and generates a computer response based on this information.

Arita further teaches a keyboard included in the system (col. 21, lines 9-15) but does not disclose that key can be transmitted through an optical data channel included in the pointer.

Amro teaches the computer input system including a keyboard having an infrared transmitter to transmit key information to the computer system.

It would have been obvious to one of ordinary skill in the art at the time when the invention was made that the keyboard of Arita can be improved by Amro by providing a wireless communication between the keyboard and a computer, which would result in more convenient arrangement.

Allowable Subject Matter

8. Claims 18-25 are allowed.

9. The following is an examiner's statement of reasons for allowance: none of the references, either singularly or in combination, teach or fairly suggest a method for remotely controlling computer comprising displaying output from the computer on a remotely located screen; encoding keyboard information by modulating one or more optical pointer features;

projecting the encoded keyboard information on the screen; capturing a plurality of image frames; processing image frames to detect and decode the encoded keyboard information transmitted by the optical pointer; and generating a command to control the computer based on decoded information.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Eisen whose telephone number is **(703) 306-2988**. The examiner can normally be reached on M-F (9:00 a.m. - 4:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on **(703) 305-4709**.

Any response to this action should be **mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or **faxed to:**

(703) 872-9314 (for Technology Center 2600 only).

Hand-delivered responses should be **brought to:** Crystal Park Two, 2121 Crystal Drive, Arlington, Virginia, Sixth Floor Receptionist.

Any inquiry of a general nature or relating to the status of this application or proceeding should be **directed to:** Technology Center 2600 Customer Service Office, whose telephone number is **(703) 306-0377**.

Alexander Eisen
February 6, 2004